

Accordingly, applicants have revised Claim 1 to read on the subject matter of Claim 8. Additionally, applicants have deleted the references in Claim 13 to exemplary embodiments, and have added new Claim 15 to bring out the deleted embodiments. No new matter has been added.

Applicants have also revised page 19 of the specification to include a brief description of the drawing, and have amended the drawing to include a label "Figure 1". Support for the added description of the drawing is provided by applicants' statements on page 21, indicated lines 23 and 24, in conjunction with page 19, indicated line 27, and page 20, indicated line 17, of the application. No new matter has been added.

In light of the foregoing and the attached it is respectfully requested that the Examiner withdraw the objections to the specification and the drawing, and the rejection of Claims 9 and 13 under Section 112, ¶2. Favorable action is solicited.

The Examiner rejected Claims 1 to 13 under 35 U.S.C. §102(b) as being anticipated by the teaching of *Eller et al.* (US 6,111,141). In particular, the Examiner argued that the teaching of *Eller et al.* provided for a process for preparing N-ethyl-diisopropylamine in the presence of a supported catalyst which is obtained by impregnating a support material, inter alia zirconium dioxide, with a catalytically effective component.

Applicants invention relates to a process for preparing amines in which a primary or secondary alcohol, aldehyde or ketone is reacted with hydrogen and ammonia, a primary or a secondary amine in the presence of a catalyst, which catalyst has been prepared by a procedure involving a precipitation of catalytically active components onto monoclinic, tetragonal or cubic zirconium dioxide. In accordance with applicants' process it is further required that the catalytically active composition of the catalyst before treatment with hydrogen comprises

from 20 to 65% by weight of oxygen-containing compounds of zirconium, calculated as  $ZrO_2$ ,

from 1 to 30% by weight of oxygen-containing compounds of copper, calculated as  $CuO$ ,

from 15 to 50% by weight of oxygen-containing compounds of nickel, calculated as  $NiO$ , and

from 15 to 50% by weight of oxygen-containing compounds of cobalt, calculated as CoO.

It is respectfully urged that anticipation under Section 102 can be found only if a reference shows exactly what is claimed.<sup>2)</sup> Accordingly, the test for anticipation is one of identity, which means that the identical invention must be shown in the reference in as complete detail as is contained in the claim.<sup>3)</sup> The teaching of *Eller et al.* cannot reasonably be regarded as providing an identical description of applicants' process in as complete detail as is, for example, contained in applicants' Claim 1.

In accordance with the teaching of *Eller et al.* the catalyst material can be prepared in a variety of ways including peptizing pulverulent mixtures<sup>4)</sup> and the joint precipitation of all of the catalyst components.<sup>5)</sup> The catalysts comprise in the catalytically active mass before their reduction with hydrogen<sup>6)</sup>

from 50 to 99.9% by weight of ZrO<sub>2</sub> and/or TiO<sub>2</sub> and/or Al<sub>2</sub>O<sub>3</sub> and/or SiO<sub>2</sub> and/or ZnO and/or MgO and/or CeO<sub>2</sub> and/or clays and/or zeolites; and

from 0.1 to 50% by weight of Cr, Mo, W, Re, Ru, Rh, Pd, Os, Ir, Pt, Ag, Au, Fe, Co, Ni and/or Cu, calculated as metal in the oxidation state 0; and

from 0 to 30% by weight of one or more elements (oxidation state 0), or their inorganic or organic compounds, selected from the groups IA to VIA and IB to VB of the periodic Table of the Elements.

As such, the teaching of *Eller et al.* pertaining to the particularities of the catalyst which is employed in the preparation of the amines is, at best, generic to the requirements which the catalyst has to meet in accordance with applicants' process.

It is well settled that a genus does not inherently disclose all species which happen to fall within its range,<sup>7)</sup> and a generic disclosure is, therefore, not sufficient to anticipate each species or sub-

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2) Cf. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (CAFC 1985); *In re Marshall* 577 F.2d 301, 198 USPQ 344 (CCPA 1978); *In re Kalm* 378 F.2d 959, 154 USPQ 10 (CCPA 1967)

3) Cf. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (CAFC 1989)

4) Cf. col. 3, indicated line 34 et seq., of *US 6,111,141*.

5) Cf. col. 3, indicated line 58 et seq., of *US 6,111,141*.

6) Cf. col. 2, indicated line 66, to col. 3, indicated line 16, of *US 6,111,141*.

7) Cf., for example, *Corning Glass Works v. Sumitomo Electric U.S.A.*, 868 F.2d 1251, 9 USPQ2d 1962 (CAFC 1989); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (CAFC 1992).

genus which happens to fall within the generic range of the disclosure.<sup>8)</sup> Since the teaching of *Eller et al.* fails to describe the particularities of the catalyst which is employed in the preparation of the amine in the specificity which is necessary for a finding of anticipation under Section 102, it is respectfully requested that the rejection of Claim 1 as being anticipated by the teaching of *Eller et al.* be withdrawn. Applicants' Claims 2 to 6, 9 to 13 and 15 depend, either directly or indirectly, upon Claim 1 and incorporate the respective elements of applicants' process by reference, so that those claims are equally not anticipated by the teaching of *Eller et al.*<sup>9)</sup> Favorable action by the Examiner is solicited.

For completeness sake it is further respectfully submitted that the process which is defined in applicants' Claim 1 and further specified in applicants' Claims 2 to 6, 9 to 13 and 15 cannot be deemed to be rendered prima facie obvious within the meaning of Section 103(a) by the teaching of *Eller et al.* Obviousness within the meaning of Section 103(a) requires more than the mere possibility to make a selection from the generic disclosure of a reference which mirrors the combination of requirements set forth in an applicant's claim. The reference also has to provide some teaching or suggestion which would motivate a person of ordinary skill in the art to make the particular selection which results in the claimed combination.<sup>10)</sup> Where the motivating teaching or suggestion is not found in the reference, any possible selection and combination within the generic disclosure is equally likely and the reference is no more than an invitation to make and try out each of the possible selections and combinations. "Obvious to try" is, however, not a proper basis for finding that a claimed invention is unpatentable under Section 103(a).<sup>11)</sup> Moreover, the "invention as a whole" which is referenced in 35 U.S.C. §103(a) is not limited to the elements or features which

8) Cf., for example, *In re Jones*, 958 F.3d 347, 21 USPQ2d 1614 (CAFC 1992), and *In re Baird*, 16 F.3d 380, 29 USPQ2d 1550 (CAFC 1994), which point out that a genus does not even render all species that happen to fall within the genus obvious.

9) If an independent claim is non-obvious under 35 U.S.C. §103, then any claim depending therefrom is non-obvious (*In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (CAFC 1988)). Anticipation is the ultimate or epitome of obviousness (*In re Grose*, 592 F.2d 1161, 201 USPQ 57 (CCPA 1979)).

10) Cf. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (CAFC 1991). See also *In re Baird*, *ibid.*, 16 F.3d at 382; *In re Jones*, *ibid.*, 958 F.2d at 350.

11) Cf. *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (CAFC 1989) where the Court held that an invention was merely "obvious to try" if the prior art gives either no indication of which parameters are critical or no direction as to which of the many possible choices is likely to be successful.

are specifically recited in the claim but also encompasses the properties which are inherent in the specific combination of the requirements which is defined by the claim:<sup>12)</sup>

*In determining whether the invention as a whole would have been obvious under 35 U.S.C. 103, we must first delineate the invention as a whole. In delineating the invention as a whole, we look not only to the subject matter which is literally recited in the claim in question... but also to those properties of the subject matter which are inherent in the subject matter and are disclosed in the specification... Just as we look to a chemical and its properties when we examine the obviousness of a composition of matter claim, it is this invention as a whole, and not some part of it, which must be obvious under 35 U.S.C. 103.*

As shown by the experiments which are summarized in applicants' description of the invention, the particular combination of the requirements which have to be met in accordance with applicants' process provide that the catalyst exhibits a distinctly improved stability, or lateral compressive strength, in the context of the preparation of amines when compared to a catalyst of identical composition which is, however, prepared by a joint precipitation method as addressed in the teaching of *Eller et al.*<sup>13)</sup> Applicants' process has, correspondingly, the distinct advantage over a process addressed in the teaching of *Eller et al.* in which the catalyst is obtained by a joint precipitation procedure that applicants' process does not have to be interrupted as frequently in order to change the catalyst, and applicants' process, therefore, provides for a distinctly improved space-time yield of the amines.<sup>14)</sup> The teaching of *Eller et al.* does not suggest or imply that the measures which are taken in the preparation of the catalyst have an impact on the suitability of the catalyst in the preparation of amines, and the teaching of *Eller et al.* is therefore insufficient to render applicants' process *prima facie* obvious within the meaning of Section 103(a). Favorable action is respectfully solicited.

The Examiner rejected Claims 1 to 12 under 35 U.S.C. §112, ¶1, taking the position that the specification failed to provide an enabling disclosure of the claimed invention beyond the embodiment of

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12) Cf. *In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977); emphasis original.

13) Cf. page 20, indicated line 27, to page 21, indicated line 29, in conjunction with Figure 1, of the application.

14) Cf. page 2, indicated lines 14 to 21, of the application.

applicants' process which is defined in Claim 13. In this context, the Examiner inter alia argued

- (a) that the state of the art was such that starting materials, products, solvents, catalysts, temperature ranges and the like were specifically defined;
- (b) that applicants failed to provide representative examples; and
- (c) that the level of predictability in the art was low because chemistry was an experimental science.

With regard to the Examiner's position in (c), it is respectfully submitted that a general allegation of "unpredictability in the art" is not a sufficient reason to support a rejection under Section 112, ¶1. The "predictability or lack thereof" in the art refers to the ability of a person of ordinary skill in the pertinent art to extrapolate the disclosed or known results to the claimed invention. If one skilled in the art can readily anticipate the effect of a change within the subject matter to which the claimed invention pertains, then there is predictability in the art. On the other hand, if one skilled in the art cannot readily anticipate the effect of a change within the subject matter to which that claimed invention pertains, then there is lack of predictability in the art. Accordingly, what is known in the art provides evidence as to the question of predictability.<sup>15)</sup>

The question whether the art is, with regard to a particular feature of a claimed invention, predictable or not is accordingly closely related to the knowledge which is readily available at the time at which an invention is made.<sup>16)</sup> Based on the knowledge already acquired in the art with regard to, for example, a catalyzed process, it is therefore generally possible for a person of ordinary skill in the in the art pertaining to the catalyzed reaction to extrapolate results of representative investigations into a new process and to reasonably assess whether reactants which are known to act correspondingly in accordance with the prior art will act in a corresponding manner under the circumstances and conditions of the new procedure. An application need not teach, and preferably omits, that what is already well known in order to to enable a person of ordinary skill in the art to make and use the claimed invention within the

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15) Cf. In re Marzocchi, 439 F.2d 220, 169 USPQ 367 (CCPA 1971).

16) See eg. the assessment of the scope and content of the prior art addressed in In re Wands, 858 F.2f 731, 8 USPQ2d 1400 (CAFC 1988).

meaning of Section 112, ¶1.<sup>17)</sup>

Contrary to the Examiner's position in (a), the prior art corroborates that a person of ordinary skill in the art considered the specific nature of the primary or secondary alcohol, aldehyde or ketone and of the nitrogen compound selected from the group consisting of ammonia and primary and secondary amines to be of subsidiary impact on the catalyzed preparation of amines. In this context, the Examiner's attention is drawn, in particular,

- to Claim 1 of *Nouwen et al.*, col. 13, indicated line 43 et seq., of *US 6,525,222*;
- to Claim 1 of *Habermann*, col. 4, indicated line 58 et seq., of *US 4,152,353*;
- to Claim 1 of *Wulff-Döring et al.*, col. 11, indicated line 23 et seq., of *US 6,057,442*;
- to Claim 1 of *Reif et al.*, col. 12, indicated line 21 et seq., of *US 5,530,027*; and
- to Claim 1 of *Funke et al.*, col. 17, indicated line 2 et seq., of *US 6,417,353*,

all of which references are of record. The Examiner's position taken in (a) is therefore not deemed to be well taken.

Moreover, the Examiner's assertion in (b) that applicants failed to provide representative experiments is in error in light of applicants' description on pages 19 to 21 of the application. It is also respectfully noted that experimental data are not required in order to provide an enabling disclosure of a claimed invention.<sup>18)</sup>

A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. 112, ¶1, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. Only if sufficient reason for such doubt exists, a rejection under Section 112, ¶1, for failure to teach how to make and/or use will be proper.<sup>19)</sup> It

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17) Cf. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (CAFC 1986); *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (CAFC 1984).

18) Cf. *In re Borkowski*, 422 F.2d 904, 164 USPQ 642 (CCPA 1970).

19) Cf. *In re Marzocchi*, *ibid.*, 439 F.2d at 224, 169 USPQ at 370.

is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure.<sup>20)</sup> In light of the substantial errors in the Examiner's evaluation of

- the state of the art,
- the predictability or lack thereof in the art, and
- the guidance or direction provided by applicants,

the Examiner's conclusion that the amount of experimentation which a person of ordinary skill would be required to undertake would pose an undue burden cannot be considered to be a result of an evaluation of the pertinent facts as promulgated by the Court in In re Wands.<sup>21)</sup> Since the Examiner has, therefore, not established that applicants' disclosure fails to be enabling within the meaning of Section 112, ¶1, it is respectfully urged that the respective rejection be withdrawn. Favorable action is solicited.

In light of the foregoing and the attached, the subject matter defined in in applicants' claims is deemed to be patentable under the pertinent provisions, and the application meets the requirements relating to the form or contents which are applicable in the present case. Allowance of the application should therefore be equitable. Early action by the Examiner would be greatly appreciated by applicants.

REQUEST FOR EXTENSION OF TIME:

It is respectfully requested that a one month extension of time be granted in this case. The respective \$120.00 fee is paid by credit card (Form PTO-2038 enclosed).

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit

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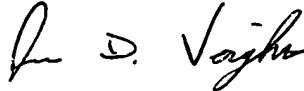
20) Cf. In re Marzocchi, *ibid.*; note also In re Wright, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (CAFC 1993).

21) *Ibid.*

Account No. 14.1437. Please credit any excess fees to such deposit account.

Respectfully submitted,

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Encl.: SPECIFICATION AMENDMENTS (Appendix I)

CLAIM AMENDMENTS (Appendix II)

DRAWING(S) AMENDMENTS (Appendix III)

JDV/BAS



A P P E N D I X III:

DRAWING(S) AMENDMENTS:

Amend the drawing to include a label "Figure 1".

A Replacement Sheet setting forth the amended drawing is attached.